LEADING THE TRANSITION TO NET ZERO CARBON

Agenda

01 Presentation: Warren East, CEO

02 Q&A: Panel

Host: Daisy Omissi, SVP Communications, Civil Aerospace

01

Warren East, CEO

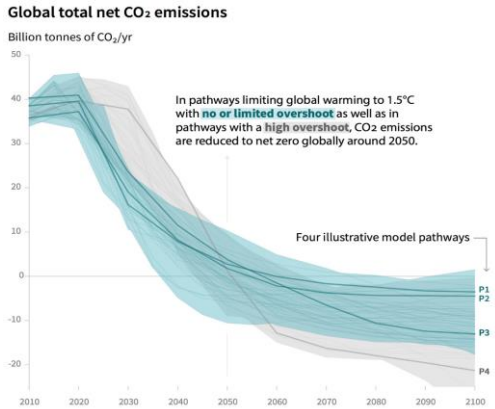
The science is clear: society must limit global warming to 1.5°C by the end of this century

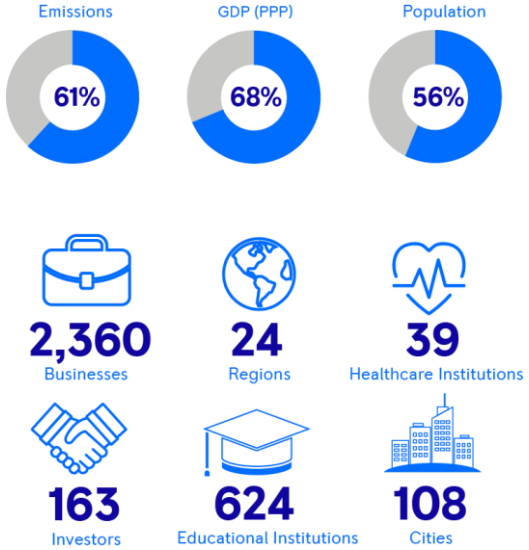
Global commitment has reached a tipping point

Yet COVID-19, which last year resulted in the largest CO_2 reductions since WW2, has also given the world a glimpse of what net zero by 2050 requires: wholesale transformation of the global economy

Can it be done? Yes. But alongside policy action, every company in every sector will need to evolve its business model

This presents a tremendous opportunity as well as challenge





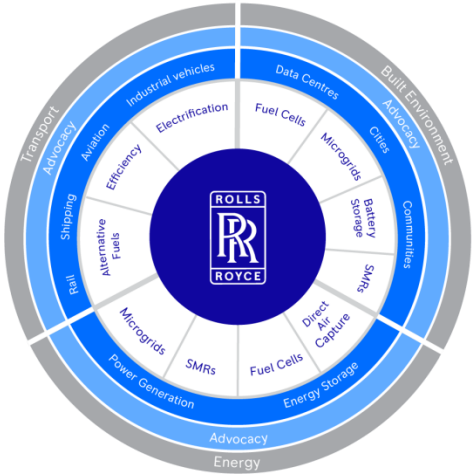
We have a fundamental role to play in meeting the challenge of climate change

We operate in some of the hardest areas of the global economy to decarbonise

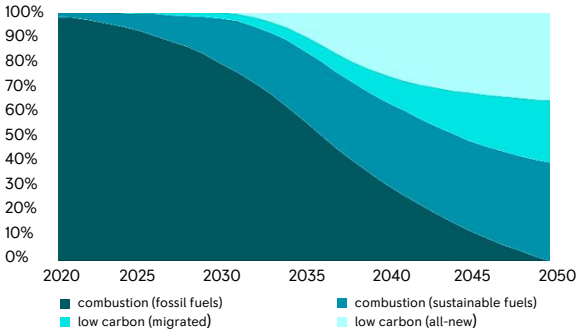
Our technologies can have an impact across multiple 'systems' – few companies have our breadth

As we pivot away from fossil-fuels, we are both expanding our business in our traditional markets and entering new areas, fuelling future growth

Applying technical pathways to decarbonise complex, critical systems



Rolls-Royce product energy transition



Our journey so far

We have decades of experience in pioneering new innovations that meet some of the world's toughest technology challenges

If we are to become a carbon-neutral business by 2050 it is vitally important that we take steps now that will enable us to create more sustainable power – and we have been

Over the past half decade, we have been growing and expanding the reach of our business as we have aligned ourselves towards our goal of championing sustainable power

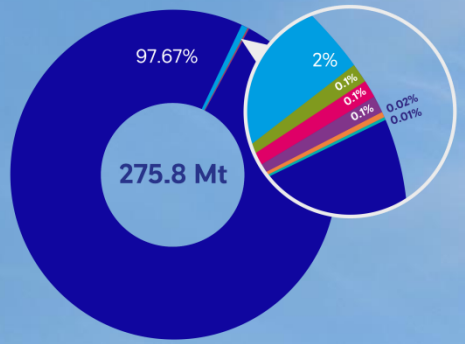
netzero

Our emissions footprint

Emissions from our own manufacturing, production and office facilities (scope 1 & 2) make up a small but important proportion of overall emissions. They are clearly within our immediate sphere of influence where we can exert more control over their reduction

The majority of our emissions profile comprises value chain emissions, upstream and downstream of our company activities (scope 3)

We operate in some of the most carbon intensive sectors and use-phase emissions are substantial. As a result, abating product-related emissions is the substantive focus of our plan



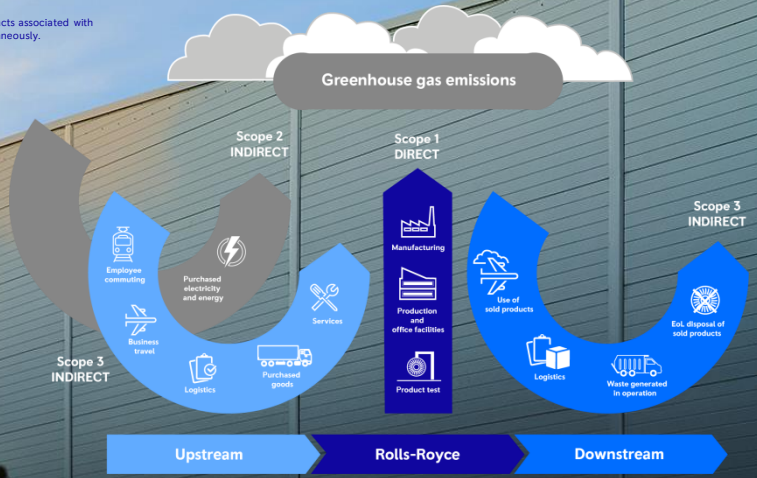
Our Emissions Footprint

- Exisiting fleet (use of sold products): 270 Mt
- Purchased goods and services (including raw materials): 5 Mt
- Product test emissions: 300 kt
- Own manufacturing, production and office facilities: 285 kt
- Employee commuting: 200 kt
- Business travel: 50 kt
- Logistics: 30 kt

NOTES:
We have calculated our GHG emissions footprint in accordance with the WRI/WBCSD GHG Protocol Scope 3 Standard (2011), which classifies emissions according to three scopes: scope 1 includes direct on-site emissions. Scope 2 includes indirect on-site emissions (e.g. purchased electricity). Scope 3 includes upstream or downstream emissions in the value chain outside a company's own operations.

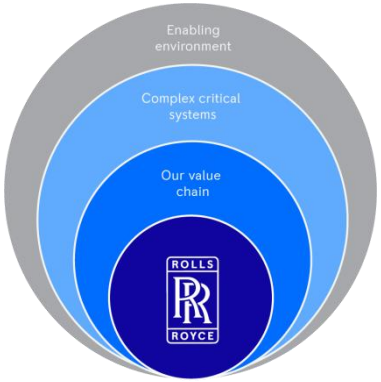
The emission disclosed are based on 2019 data given the impact of COVID-19 on our business activities and product operations during 2020. This contains some estimations based on best available data and methodology at time of publication, informed by a preliminary scoping exercise to determine which scope 3 categories, besides emissions associated with the use of sold products, are relevant. We continue to focus on improving the completeness of our data which may lead to further disclosures in future.

This report focuses specifically on carbon dioxide, however we recognise the broader environmental and social impacts associated with Rolls-Royce's products. The technology levers discussed have the potential to address some of these impacts simultaneously.

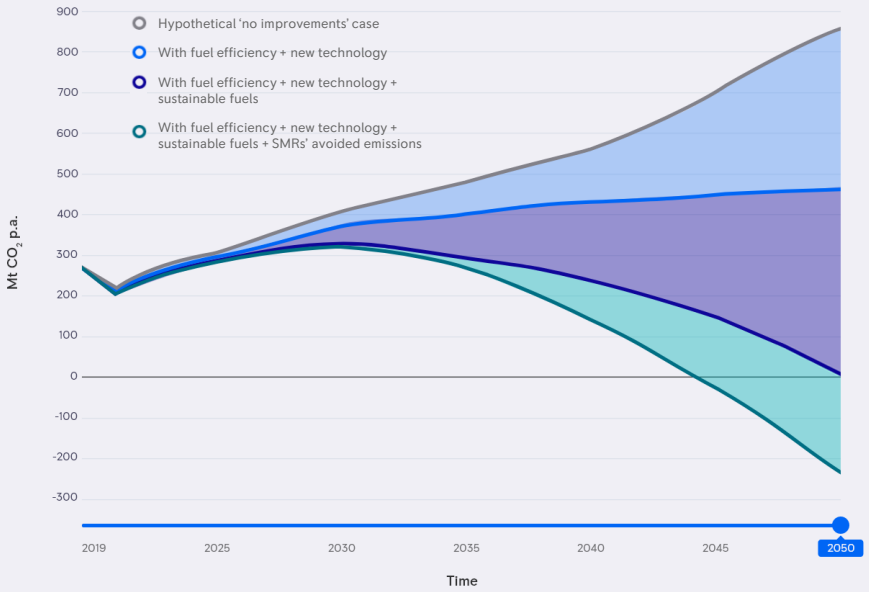


Our decarbonisation strategy

Our decarbonisation strategy starts with the emissions in our own operations, extends to our value chain, and ultimately focuses on the contribution we can make to the global transition



Rolls-Royce Products in Service: Change in Annual CO_2 Emissions from 2019 to 2050



Technology assumptions

These pathways are based on our best understanding of the technological solutions available to us today, and our current understanding of the potential future market application for those technologies.

We have calculated our GHG emissions footprint in accordance with the WRI/WBCSD GHG Protocol Scope 3 Standard (2011). Scope 3 emissions accounting includes estimates and assumptions, in this instance these assumptions include the life cycle CO_2 saving of lower carbon alternative fuels will reach 100% by 2050, from approaching 70% today.

In this chart we have depicted future business growth opportunities in new low, or net zero, technologies that serve markets in which we are not currently present (e.g. SMRs for large scale power generation). They are therefore depicted as additional compensation actions as they do not abate emissions within Rolls-Royce's current scope 3 footprint but instead support the decarbonisation of other sectors.

Notes
For further details refer to page 20 of the Leading the Transition to Net Zero Carbon report

Our technology pathway to net zero:

- Pioneering new low and zero carbon technologies and sustainable solutions
- Helping accelerate the availability and affordability of sustainable fuels by ensuring our products are compatible
- Continuing to make our products more efficient

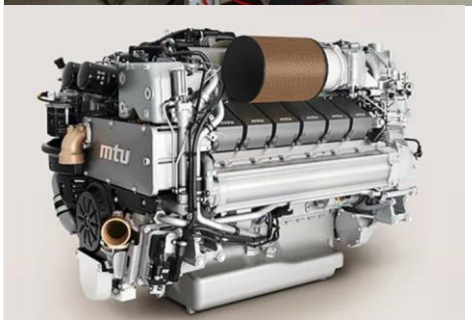
This way **we can bend the current emissions curve to net zero by 2050**

Making Rolls-Royce a net zero company by making our products compatible with net zero

All new products will be compatible with net zero operation by 2030 and all our products compatible with net zero by 2050



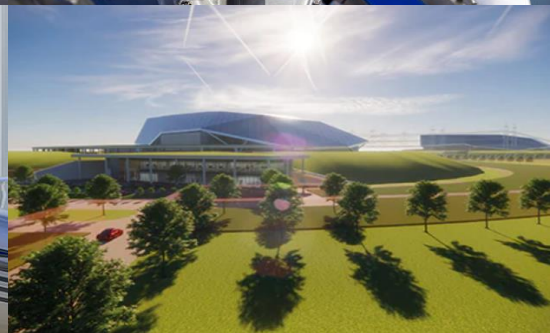



Making Rolls-Royce a net zero company by pioneering new breakthrough technologies

The transition to net zero represents a tremendous opportunity for Rolls-Royce

As our business pivots away from fossil-fuels, we are entering into new markets and opening up new growth opportunities



Targets – summary

2023 sustainable fuels targets are linked to executive remuneration

We have pledged to achieve **net zero carbon** in our operations by 2030 and play a crucial role in enabling the sectors in which we operate reach **net zero by 2050.** Our new products will be **compatible with net zero operation by 2030** and **all** our products will be compatible with net zero by 2050, in line with our UN Race to Zero commitment

Setting targets to get our products compatible with sustainable fuels. By **2023** we will:

- Have proven **all our in-production commercial aero engine** types compatible with **100% SAFs:** two-thirds of Trent engine fleet* and three-fifths of business jet fleet** in service today
- Have replaced 10% of the fuel we use in all Civil Aerospace testing and development activities with SAF
- Show compatibility with SAFs for our in-production **Defence** aero-engines, subject to customer agreement
- Have **certified** new generation **Series 2000** and **Series 4000** engines from Power Systems with **sustainable fuels***, reflecting the majority of the reciprocating engines we make
- Have integrated **2MW of hydrogen fuel cells** into operational **microgrid** demonstrators

Defining a **science-based interim target** to reduce the **lifetime emissions** of new sold products from our Power Systems business **by 35% by 2030**

Pivoting our **R&D expenditure** towards more lower carbon and net zero technologies: moving from ~50% to at least 75% by 2025

*Trent XWB-97, Trent XWB-84, Trent 7000, Trent 1000 TEN, Trent 700; based on 2019 installed engine fleet.

**Pearl 700, Pearl 15, BR725 and BR710.

***Compliant with DIN EN 15940

02

Panel Q&A

Warren East
CEO

Andreas Schell
President, Power Systems

Tom Bell
President, Defence

Paul Stein
Chief Technology Officer

Rachael Everard
Head of Sustainability

Rob Watson
Director, Rolls-Royce Electrical

How to ask a question:
Please submit your questions via the question tab on the platform at the top of the screen.

netzero

For more information please visit
www.rolls-royce.com